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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,587	04/01/2004	Isao Sawamoto	4900.P0044US	9472
23474 7590 01/11/2008 FLYNN THIEL BOUTELL & TANIS, P.C. 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1631			EXAMINER WILKINS III, HARRY D	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 01/11/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/815,587	Applicant(s) SAWAMOTO ET AL.	
	Examiner Harry D. Wilkins, III	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-10 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7, 9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status

1. The rejection of claims 5-7 under 35 USC 112, 1st paragraph has been withdrawn in view of the cancellation of claim 5.
2. The art rejection based on Shimamura et al has been withdrawn in view of new claim 9, which requires a porous anode and a porous cathode. Shimamura et al teaches a solid cathode.
3. The rejection under 35 USC 102 based on Yamanaka et al has been withdrawn in view of the cancellation of claim 5 and presentation of new claim 9 which requires the carbonation structure.
4. The Examiner notes the substitute specification and new abstract filed by Applicant. These have been entered into the record and replace the previous versions of the papers in the application.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 9, 10 and 7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims recite several "means". This is deemed to invoke 35 USC 112,

sixth paragraph. However, this does not exclude this claim language from meeting the requirements of 25 USC 112, first paragraph. As such, since Applicant failed to recite any "means", and its corresponding structure, in the application as filed, these claims are deemed to fail the enablement requirement. See MPEP 2181.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 9-10 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka et al (US 5,720,869) in view of Uchida et al (US 6,164,632).

Yamanaka et al anticipate the invention as claimed. Yamanaka et al teach (see abstract, figure 1, col. 9, line 39 to col. 12, line 5) an electrolytic gas generation device including an anode, cathode and ion exchange membrane, wherein water is fed to the anode and cathode chambers. Ozone and oxygen are produced at the anode, and hydrogen at the cathode. Yamanaka et al teach that additions of electrolyte are made to the high purity water being fed to the anode chamber, and include carbonic acid as a suitable electrolyte. It would have been considered a routine selection to one of ordinary skill in the art to have selected carbonic acid from the finite list of electrolytes disclosed by Yamanaka et al. Carbonic acid is carbon dioxide dissolved in water, thus the device of Yamanaka et al would have necessitated a structure which exposed the anolyte to carbon dioxide gas to permit carbonation of the anolyte.

Yamanaka et al fail to teach how the carbonic acid is formed within the anolyte solution. However, since carbonic acid is generally accepted in the chemical arts to mean carbon dioxide dissolved in water, i.e.-carbonated water, it would have been obvious to one of ordinary skill in the art to have added conventional structure for exposing the water to carbon dioxide to permit the carbon dioxide to dissolve so as to form the carbonic acid solution disclosed by Yamanaka et al.

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated the carbonation device of Uchida et al (see figures 1 and 3), which included a membrane film on one side of which carbon dioxide gas was fed and on the other side of which water was fed so as to dissolve the carbon dioxide in the water, because Uchida et al teach that the membrane carbon dioxide dissolver operated with high efficiency (see col. 3, lines 13-15).

Response to Arguments

9. Applicant's arguments filed 9 November 2007 have been fully considered but they are not persuasive. Applicant has argued that:

- a. Yamanaka et al discloses only a large list of suitable electrolytes and happens to include carbonic acid on the list.

In response, it has been held that selection of one embodiment from a finite number of identified, predictable solutions with a reasonable expectation of success has been held to be *prima facie* obvious. See Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.* In this instance, the prior art recognized a need for

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independent control of conditions at the anode and cathode, and suggested a finite number of practical electrolytes which could be added to the water permit that control (see col. 11, lines 33-60 of Yamanaka et al).

- b. Applicant has shown unexpected results by the comparison data submitted in the specification showing an increase in production when using carbonated water as opposed to no carbonation.

In response, Applicant's data and remarks are noted, but they are not persuasive. Applicant has not compared the present invention to the closest prior art. The closest prior art is not electrolyzing with pure water, which is what Applicant's comparison tests are. The closest prior art involves adding an electrolyte to the water, such as other acids, as is disclosed by Yamanaka et al. Thus, if Applicant continues the argument that an unexpected result is produced, data should be submitted comparing using carbonic acid and its resulting ozone production to using other electrolytes, such as hydrochloric acid (utilized by Yamanaka et al at col. 13, lines 29-33), and its resulting ozone production.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

hdw


HARRY D. WILKINS, III
PRIMARY EXAMINER
A.U. 1795